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ABSTRACT

The hypothesis that teacher personality characteristics affect student achievement is examined. This paper presents a preliminary analysis of the relationship of teachers' selfdescriptions to their students' changes over a school year. Two types of teacher measurement were obtained: observations of behavior and self reports. All student measurements used were selfreport measures, with the exception of an achievement test. The teacher with whom each child was paired was the sixthgrade homeroom teacher since two to three hours a day were spent with this teacher. During the school year tests were given to the pupils over several class periods at the beginning of the fall semester and near the close of the spring semester. Both teachers and pupils were asked to rate themselves on such personality characteristics as selfesteem, introversion, and reactions to other people. Teachers also rated themselves on such attitudes and coping items as anxiety, authority, handling children in the classroom, task achievement, and positive and negative feelings. The results of a year's observation and comparisons between attitudes and outcomes indicated a modest degree of relatedness between teacher personality and observed teaching behavior. Significant relationships were found between teacher personality and changes in pupils' achievement, attitudes, and selfesteem. (JD)

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Many educational practitioners express conviction that grade-school teachers' personalities and attitudes are potent determinants of their effects on students. The research support for this proposition is ambiguous. For example, Gall, Borg, Kelley and Langer (1969) found that while personality measurements were originally associated with male teacher behaviors, the relationship shrank or disappeared with training. On the other hand, Veldman (1970) found that teacher personality measurements were predictive of the behavior of student teachers as evaluated by the pupils, and Reed (1953) found a significant relationship between teacher level of self-acceptance and teacher classroom effectiveness. Overall, the direct evidence that teachers' attitudes modify even the affective behaviors of the pupils is very slight (Khan and Weiss, 1973). One problem is that, up to the past several years, there were very few studies assessing teacher effectiveness through the use of student growth measures (Burkhart, 1969). Another is the lack of common agreement on what criteria should be used to evaluate teaching results. Sorenson and Gross (1967) explicitly claim that "to attempt to define teaching success in terms of some simple fixed teacher ideal is both intolerable and inappropriate ... teachers are bound to be regarded differently by persons with varying concepts of the teachers' role" (pp 1-2). Nevertheless, recent studies have shown a positive relationship between teacher self-concept and student achievement and skill gain (Glavin,

1974; Aspy, 1969). Thomas, Bechker & Armstrong, 1968, and Biddle, 1969, among others, find that, in general, positive teacher attitudes are associated with more positive pupil attitudes.

It is assumed that those teacher personality characteristics which affect pupil change do so through teacher behaviors. Gage and Winne (1975) reported studies showing that negative teacher affective behaviors have been related to lower student achievement, and that student performance correlates positively with the child's perception of the teacher's positive feelings. Rosenshine and Furst (1973) list at least nine teacher behaviors which have been shown through research to be significantly related to student growth.

Therefore, it is important to determine both the manner in which teacher personality characteristics affect teacher behaviors, and how teacher characteristics affect student outcomes, not necessarily achievement alone.

Method

The Research and Development Center at the University of Texas at Austin is undertaking the development of valid and reliable instruments for the measurement of teacher personality traits. Two such instruments sustained repeated pilot testing and were included in the current Teaching-Learning Interaction (TLI) study.

The purpose of the TLI study has been to measure teacher personality characteristics, teacher classroom behaviors, and student characteristics in the achievement, attitude, self-concept, and coping realms. Data were

collected in two different states, in two consecutive sixth grade cohorts, and are now being analyzed to determine what teacher characteristics and behaviors, by themselves and in conjunction with student pretest levels, influence gain or loss over a period of one school year. An important aspect of the study will be to determine whether the findings replicate in different years and different locations. The present paper reports a preliminary analysis of the relationship of teachers' self-descriptions to their students' changes over a school year in achievement, self-esteem, attitude, and coping skill.

Subjects

Fifty-three sixth grade Austin teachers, in four schools, along with their classes, participated in the study. Because the city was undertaking an experimental program of sixth grade centers at the time, the assignment of pupils to classes was stratified and random: the ethnic composition of each class was proportional to that of the city as a while. The tri-ethnic classroom population was as follows: 70% Anglo, 15% Afro-American, and 15% Mexican-Americans. The randomness of the student classroom assignment, with respect to those teacher characteristics measured, was tested in several ways. The teachers were predominantly Anglo women, but with several exceptions.

Each child was with several teachers during the day. The teacher with whom each child was paired in the TLI study was the homeroom teacher, who also served as either the reading or social studies instructor. The child therefore spent two to three hours a day with this teacher.

Instruments

Teacher Measures

Two types of teacher measurements were obtained: observations of behavior, and self reports. The Views of Teaching (VOT) is a 38-item sentence completion instrument given to teachers. It was adapted by R.F. Peck from a child instrument developed earlier in the Cross-National Study of Coping Styles (Peck et. al, 1973). Two subsets of items provide an Attitude score (VOT-ATT) and a Coping score (VOT-COP). The response to each attitude item is coded by a rater as having positive, neutral or negative affect. The rater reliability is .95. Answers to the Coping items are categorized and then scaled according to a manual, to indicate the teacher's reported level of effectiveness in dealing with problems in several aspects of life. (Scaling reliability is above .98). The attitude items deal with authority, interpersonal relations, task achievement, anxiety, children, and self-concept. The coping items cover authority, interpersonal relations, aggression, task achievement, anxiety, and handling children in the classroom. The alpha reliabilities for VOT-COP and VOT-ATT are, respectively, .69 and .41, and the test-retest reliabilities in the present sample are .73 and .53.

The Adjective Self Description (ASD), distilled from Gough's much longer pool of items, consists of 56 Likert-scaled items that yield seven independent scales of self-rated attributes (Veldman and Parker, 1970). The seven scales, along with their interpretations, alpha reliabilities, and test-retest correlations, are 1) attitude (ASD-ATT) (High scoring rater sees self as "nice person", .85, .85); 2) behavior (ASD-BEH)

(High scorer assesses self as non-productive, non-social; .75, .86); 3) efficiency (ASD-EFF) (High scorer assesses self as efficient and organized; .84, .88); 4) introversion (ASD-INT) (High scorer is introverted; .88, .92); 5) anxiety (ASD-ANX) (High scorer assesses self as over sensitive, worrying; .83. .89); 6) individualism (ASD-IND) (High scorer is a thoughtful, nonconforming person; .64, .84); and 7) attractiveness (ASD-ATRV) (High scorer expresses a very positive self-image; .69, .80).

Teachers' observed behavior was measured by the three Classroom Observation Record (COR) scales, developed by Ryans, 1960. The instrument itself includes 20 medium inference scales. Once the 252 teachers were rated over an average of four class periods, the scales were factor analyzed. The same three scales which Ryans had reported were found: Kindly-understanding (KU), Systematic-organized (SO), and Stimulating-inventive (SI). The rater reliabilities for KU,SO,and SI were, respectively, .97, .98, and .98. The internal consistency measures were .76, .97 and .95.

Pupil Measurements

All the pupil measurements used in this study were self report measures, with the exception of the achievement test. Each measure is listed, along with its reliability data, usually the internal consistency and test-retest coefficients. A brief description will also be provided.

Student Evaluation of Teaching (SET). The SET is an eight-item, Likert-scaled test, designed to elicit students' attitudes towards their teachers on a broad evaluative dimension which includes both learning and interpersonal aspects (Test-retest: .78, over two weeks; N = 61).

School Sentiment Index (SSI). The SSI, developed by the Instructional Objectives Exchange, UCLA Center for the Study of Evaluation, and adapted for TLI use, measures student attitudes toward various aspects of school. The total score used for this study measures attitudes toward the teacher, learning, and school in general, and is based on 54 of the original 81 items. Internal consistency is reported as .72.

Piers-Harris Children's Self-Concept Scale (P-H). The P-H, developed by E.V. Piers and E.D. Harris, was used to assess the self concept of the pupils, collapsed across several dimensions. The total score, consisting of 80 items, was used. Internal consistency is .93 for this study, and test-retest reliability is reported to be around .71.

Student Sentence Completion -- Attitude and Coping (SSC-A, SSC-C). The SSC, originally developed by R.F. Peck, Elaine Michelis, and colleagues abroad in the Cross-National Study of Coping Styles (Peck et. al, 1973), is used to derive student self-ratings with respect to attitude towards life, and coping skills. The instrument itself consists of 26 items, 12 composing the attitude scale (SSC-A) and 14 composing the coping scale (SSC-C). Each item is a sentence stem to which, in the TLI version, the pupil may select one of four completions most appropriate to the student's perceptions of self or environment. The post SSC-A has an alpha reliability of .63, and a test-retest correlation of .63. The SSC-C has an alpha reliability of .69 and a test-retest reliability of .68.

Comprehensive Tests of Basic Skills (CTBS). The pupils were given either a language arts test or social studies from the CTBS battery, depending on which subject was to be taught by their homeroom teacher.

Form S, Level 2 was administered for the pretest, and Form S, Level 3 for the posttest, since many students scored near the top on the pretest. Internal consistency is generally in the .80's, as reported in the CTBS, Technical Bulletin No. 1 (1974, pp 41-42).

Procedure

During the school year 1974-1975, tests were given to the pupils over several class periods at the beginning of the Fall, 1974 semester, and near the close of the Spring, 1975 semester. This provided a basis for the study of change over a school year for the pupils. The teachers were given the teacher self-report instruments [Views of Teaching (VOT), and Adjective Self Description (ASD)] at the start of their participation in the study in the Fall. The teacher behavior measurements (COR-KU, COR-SO, and COR-SI) were taken from observations made of the classroom by trained observers between January and March, 1975. Each class was observed approximately once every two weeks.

Results

The effects of the teacher characteristics on the pupils were analyzed using a linear models approach which treated all the measurements as continuous variables, and which took into account quadratic predictor effects, and pretest by predictor interactions. The linear pupil pretest score was partialled out, in an attempt to control for the entering level of the students. The analyses were performed using the individual teacher and pupil scores.

Because of the large number of individuals tested (1657), very small effects proved to be statistically significant. For the project as a whole, using classroom behavior measures, an effect was reported only if it

accounted for over 1% of the variance, as well as showing a significance of $p < .01$. However, teacher self-report characteristics can have an influence on pupils only through intervening behavior which is partly conditional on situational circumstances, and the effects of the behavior are also conditioned by other influences. Therefore, a teacher effect will be reported if it attained a significance of $p < .01$, and .5% or more of the uncorrected variance or .7% of the corrected posttest variance explained. In those cases where the predictor was a single linear or quadratic term, not an interaction term, the percent of explained variance was corrected by multiplying by $1/(1-R^2xy)$, where $R^2x\cdot y$ is the squared correlation between the pretest and the posttest.

The full model for this analysis is as follows:

$$Y = aU + bX + cP + dP^2 + eXP + FXP^2 + E$$

where Y = posttest

X = pretest

P = teacher characteristic used as the predictor

XP, XP^2 = interaction vectors(obtained by multiplying the pretest scores by the predictor scores).

Each component was tested by dropping it from the starting model, in the order listed. Interpretations were made by graphing the expected values of the posttest at one standard deviation above and below the mean of the predictor, and at the predictor mean. For interaction effects, such a plot was performed for each of the three levels of the pretest. Because the pretest is partialled out, the predicted posttest is calculated at a common pretest level, insofar as a correction can be made. The term "gain" will be used to signify the predicted posttest at a common pretest score. "Gain" can be thought of as the relationship between the pretest mean, and the pre-

dicted posttest score. "Regressed change" may also be used. No correction has yet been made in this analysis for classroom homogeneity, although a methodology is worked out in Peck, 1977, Vol. III, pp. 614-623, which will be applied to these data.

Findings

Findings will be organized by the criteria.

Student Evaluation of Teacher (SET).

There was a significant VOT coping (COP) interaction effect, including both the XP and XP^2 terms [F (2,1149) = 5.79, $p < .01$%, % variance = .78],and an ASD introversion (INT) interaction, with the pretest interacting with the ASD-INT quadratic term (XP^2) [F (1,1149) = 8.29, $p < .01$, % of variance = .55].

Main Effects: none. There was a small, but significant [F (1,1152 = 5.55, $p < .05$, %v = .48 (corrected)] linear main effect which did not quite reach our double criterion. This showed a positive relationship between teacher introversion score and pupil SET regressed gain. It is visible in the recurrence of introversion as a factor in the interaction effects which follow.

Interaction Effects: For students who initially gave a highly positive evaluation (SET) of their teachers, teachers with average coping (VOT-COP) or high or medium introversion scores (ASD-INT) induced the highest SET gain. Teachers with low coping or low introversion scores induced the least gain among such students. For students who initially gave average SET evaluations of their teachers, teachers with high introversion scores induced the highest gain while those with low introversion scores induced the least gain in SET. For students who gave low initial evaluations of their teachers, teachers low in coping or those high in introversion induced the

highest SET gain, while teachers average in coping or introversion had pupils with the lowest SET gain.

Piers-Harris.

There were two main effects on the students' self concepts: a linear positive effect of ASD efficiency (EFF) [$F(1,1190) = 10.14$, $p < .01$, $\%v = .83$ (corrected)]; and a linear, positive effect of self-perception as a "nice person" (ASD-ATTitude) [$F(1,1190) = 18.43$, $p < .001$, $\%v = 1.52$ (corrected)]. There was also a pretest interaction effect with both the linear and quadratic component (XP, XP^2) of teacher self-rating on "non-productive, non-sociability" (ASD-BEH), [$F(2,1187) = 7.71$, $p < .001$, $\%v = .69$].

Main Effects: Pupils, overall, had the largest self-concept gain with teacher who rated themselves as "nice people" (ASD-ATT) or efficient (ASD-EFF). Pupils had the lowest self-concept gain with teachers who rated themselves low on attitude or efficiency.

Interaction Effects: Pupils initially high in self-esteem showed the most gain with teachers who rated themselves as "nice persons" (ASD-ATT). Such pupils also gained most with teachers who rated themselves either high or low, but not average, on non-productive, non-sociable behavior (ASD-BEH). These pupils showed the least gain with teachers who rated themselves medium or low on the "nice people" scale, or average on the non-productive, non-sociable scale. Pupils average in initial self-esteem had the highest gain with teachers rated low on the ASD-BEH scale or high on the ASD-ATT scale. The lowest gain for such pupils was induced by teachers with high ASD-BEH or low ASD-ATT scores. The greatest gain for pupils with low initial self-esteem was with teachers who rated themselves low or medium on non-productive, non-sociability (ASD-BEH), or high on the "nice person" (ASD-ATT) scale.

The least gain for such pupils was with teachers who gave themselves high ASD-BEH or low ASD-ATT ratings.

Student Sentence Completion-Attitude (SSC-A).

No results met the specified criteria.

Student Sentence Completion-Coping (SSC-C).

There was a quadratic main effect (p^2) of teacher self-image (ASD-ATRv) rating on SSC-C gain [F (1,1267) = 13.92, %v = 1.09 (corrected)]. Teachers with either very high or very low self-image scores induced lower general pupil coping gain than did teachers with an average self-image.

Interaction Effect: There was no interaction effect.

School Sentiment Index (SSI).

There was a curvilinear negative main effect (p^2) of teacher attitude (VOT-ATT) on pupil gain in attitude toward school (SSI) [F (1,1251) = 9.20, $p < .01$, %v = .50]. There was also an interaction of this teacher attitude measure with pupil pretest level (XP^2) on SSI [F (1,1253) = 10.66, $p < .001$, %v = .84 (corrected)]. There was, further, a significant positive, linear effect of a teachers' self-rating as a "nice person" (ASD-ATT) on pupil gain in attitude toward school [F (1,1254) = 12.43, $p < .001$, %v = .98 (corrected)].

Main Effects: Overall, students showed the greatest gain in School Sentiment with teachers who scored themselves low or medium on general attitude on the VOT-Attitude scale, or who rated themselves high on the "nice person" (ASD-ATT) scale. Students showed the least gain with teachers who expressed very high general attitudes (VOT-ATT) or who rated themselves low on the ASD-ATT scale. These effects look opposite in the two different "attitude" measures; possible reasons will be discussed below.

Interaction Effects: Students initially high on the SSI pretest showed more gain with average and low VOT-ATT teachers than with high VOT-ATT teachers. For students having an average SSI pretest, average VOT-ATT teachers induced the most gain, followed by low teachers followed by high VOT-ATT teachers. Students initially low on the SSI showed the most gain with high VOT-ATT teachers, followed by average, followed by low teachers.

Comprehensive Tests of Basic Skills (CTBS).

Teacher self-rated attractiveness (ASD-ATRV) was negatively related to regressed gain in achievement [$F(1,1182) = 10.49$, $p < .001$, $\%v = .88$ (corrected)]. Teacher self-perceived introversion (ASD-INT) was positively related to achievement gain [$F(1,1182) = 9.24$, $p < .01$, $\%v = .78$ (corrected)].

Effect of Teacher Characteristics on Teacher Behavior

An additional analysis was run, using the 53 individual teacher scores, to determine whether any of the teacher characteristics predicted teacher observed behavior. A full model was used, with both linear and quadratic predictor terms, each of which was tested for significance. The full model is as follows:

$$Y = aU + bP + cP^2 + E^{(1)}$$

where Y is the criterion (teacher behavior) and P is the predictor (teacher self-rated characteristic). In the following table, "M" will stand for average, "L" for low, and "H" for high.

TABLE 1

Criterion	Predictor	F	dF	Effect
COR KU	ASD-BEH^2	6.37*	(1,50)	L > H > M
COR SO	ASD-BEH^2	8.34**	(1,50)	L > H > M
COR SI	ASD-ATT^2	5.89*	(1,50)	H > L > M
	ASD-IND^2	4.92*	(1,50)	L > H > M
	ASD-ATRV	12.00***	(1,51)	L > M > H

* $p < .05$

** $p < .01$

*** $p < .001$

Thus, for example, those teachers scoring average on non-productive non-sociability (ASD-BEH) had the lowest Kindly, Understanding rating, while those scoring low on non-productive, non-sociability had the highest Kindly, Understanding ratings.

Table 1 can be summarized as follows: Teachers rated as high Kindly, Understanding (KU) were low in non-productive, non-sociability, (ASD-BEH) while teachers lowest on KU were average on ASD-BEH. Teachers low on Systematic, Organized (SO) were average on ASD-BEH while teachers high on SO were low on non-productive, non-sociability (ASD-BEH). Teachers high on Stimulating, Inventiveness (SI) were high on self-concept as a "nice person" (ASD-ATT), but low on thoughtful, non-conformity (ASD-IND) and put less emphasis on their personal attractiveness (ASD-ATRV). Teachers with low SI scores had an average self concept as a "nice person" (ASD-ATT) or "conformist" (ASD-IND), but rated themselves very high on personal charm and wit.

Summary

Six of the seven ASD scales and both of the VOT scales proved to be significantly related to either a teaching behavior variable or a pupil outcome. A large number of these relationships were curvilinear (20% with pupil outcomes, 80% with teacher behavior); and 30% of the relationships with pupil outcomes involved interactions with pupil entry level. While some simple, generalized relationships were found, many had to have careful specification of different effects with different sub-populations.

Simple main effects were found for the following: a high score on the ASD-ATT "nice person" factor went with stimulating, inventive teaching, and it was good for both the self-esteem of pupils and their attitude toward school. A teacher's ASD-Efficiency was also good for pupils' self-esteem. Teachers who described themselves as relatively introverted produced the best gain in pupil achievement, and in their pupils' evaluation of them. Conversely, perhaps, teachers who rated themselves high on their own charm, wit, and sophistication (ASD-ATRV) had negative effects on pupil achievement and coping skill; and they tended to be rated low as stimulating, inventive teachers by experienced observers (an illustration that narcissism is not the same as mature self-confidence?) Somewhat curiously, there was an inverse relation between observer ratings of stimulating, inventive teaching behavior and self-rated independence of thought. That ASD scale does somewhat imply an assertive kind of non-conformity, which may not be essential to stimulating, creative activity, even if some people do tend to equate the two. Definitely, a low score on ASD-BEH, (i.e., a lack of irresponsible, abrasive conduct), was associated with high observer scores on Kindly, Understanding and Systematic,

Organized teaching behavior. Further, high abrasiveness was harmful to the self-esteem of students who started out only average or low in self-esteem, though students with high initial self-esteem seemed to withstand such effects.

Teachers who portrayed themselves as effective copers had a strong impact, but it varied with the kind of teacher. Average coping scores on the Views of Teaching produced improved student evaluations, from students who rated the teacher positively at the beginning of the year; but such teachers actually lost esteem with students who rated them low at the outset (SET).

Teachers who expressed highly positive attitudes toward various aspects of their lives and work similarly had disparate effects on different kinds of students. Pupils who began the year with a good attitude (SSI) showed a negative attitude change with such extremely "cheery" teachers, while students with a more negative initial attitude responded positively.

The results, overall, indicate a modest but meaningful degree of lawful relatedness between teacher personality and observed teaching behavior even when personality is self-assessed, with the known limitations of this approach. Similarly, significant relationships are found between teacher personality and changes in pupils' achievement, attitudes and self-esteem, over a school year.

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